

WEB PROGRAMMING LAB

7. Develop JavaScript program (with HTML/CSS) for:

- a) Converting JSON text to JavaScript Object
- b) Convert JSON results into a date
- c) Converting From JSON To CSV and CSV to JSON
- d) Create hash from string using crypto.createHash() method

Expt7.html

```
<!DOCTYPE html>
<head>
    <script src="https://cdnjs.cloudflare.com/ajax/libs/crypto-
js/4.1.1/crypto-js.min.js"></script>
    <title>Simple Converter </title>
    <style>
        * {
            padding: 0;
            margin: 0;
            box-sizing: border-box;
        }

        body {
            font-family: Arial, sans-serif;
            color: #000000;
        }

        .container {
            width: 60%;
            margin: 0 auto;
            padding: 20px;
        }

        .head-title h1 {
            font-size: 28px;
            padding: 10px;
            color: #fff;
            margin-bottom: 50px;
        }
```

```
.head-title {
    width: 100%;
    background: #000;
    text-align: center;
    border-radius: 10px;
}

.section {
    margin-bottom: 40px;
    padding: 20px;
    border-radius: 8px;
    background: #fff;
    box-shadow: rgba(0, 0, 0, 0.1) 0px 1px 3px 0px,
    rgba(0, 0, 0, 0.06) 0px 1px 2px 0px;
    transition: all 0.3s;
    overflow: hidden;
}

.section h2 {
    color: #000000;
    font-size: 20px;
    margin-bottom: 15px;
}

textarea {
    font-size: 14px;
    width: 100%;
    height: 120px;
    margin-bottom: 15px;
    padding: 12px;
    border-radius: 8px;
    border: 1px solid #00000022;
    box-sizing: border-box;
    transition: border-color 0.3s ease, box-shadow 0.3s
ease;
}

textarea:focus {
    background: transparent;
    border: 1px solid #00000022;
    border-color: #007BFF;
```

```
    box-shadow: 0 0 12px rgba(0, 123, 255, 0.5);
    outline: none;
}
input[type="text"] {
    width: calc(100% - 24px);
    padding: 12px;
    border-radius: 8px;
    border: 1px solid #ddd;
    box-sizing: border-box;
    transition: border-color 0.3s ease, box-shadow 0.3s
ease;
    margin-bottom: 15px;
}

input[type="text"]:focus {
    border-color: #007BFF;
    box-shadow: 0 0 8px rgba(0, 123, 255, 0.5);
    outline: none;
}

button {
    display: inline-block;
    padding: 15px 15px;
    margin: 10px 0;
    font-weight: 600;
    border: none;
    border-radius: 7px;
    background-color: #007BFF;
    color: #fff;
    cursor: pointer;
    font-size: 16px;
    transition: box-shadow 0.3s ease, transform 0.3s
ease;
}

button:hover {
    box-shadow: 0 0 0 2px #fff, 0 0 0 4px #007BFF;
}

button:focus {
```

```
        box-shadow: 0 0 0 2px #fff, 0 0 0 4px #007BFF;
    }

pre {
    display: none;
    background: #f8f9fa;
    border: 1px solid #ddd;
    padding: 15px;
    border-radius: 8px;
    overflow: auto;
    transition: opacity 0.3s ease;
}

.error {
    margin-top: 10px;
    font-size: 14px;
    color: #000;
    background: #ffdddd;
    border-color: #ff0000;
    padding: 10px;
}

.success {
    margin-top: 10px;
    font-size: 14px;
    color: #000;
    background: #6ef08d38;
    border-color: #47e56d;
    padding: 10px;
}

.adjust-area {
    margin-top: 30px;
}
</style>
</head>

<body>
    <div class="container">
        <div class="head-title">
```

```
<h1>Simple Converter</h1>
</div>
<div class="section">
    <h2>1. Convert JSON Text to JavaScript Object</h2>
    <textarea id="jsonInput" placeholder="Enter JSON here..."></textarea>
        <button onclick="convertJsonToObject()">Convert JSON</button>
        <pre id="jsonOutput" class="output"></pre>
    </div>

    <div class="section">
        <h2>2. Convert JSON Results into Date</h2>
        <textarea id="jsonDateInput" placeholder='Enter JSON with date in "yyyy-mm-dd" format'></textarea>
        <button onclick="convertJsonToDate()">Convert to Date</button>
        <pre id="jsonDateOutput" class="output"></pre>
    </div>

    <div class="section">
        <h2>3. Convert JSON to CSV and CSV to JSON</h2>
        <textarea id="jsonCsvInput" placeholder="Enter JSON for CSV conversion..."></textarea>
        <button onclick="convertJsonToCsv()">JSON to CSV</button>
        <pre id="csvOutput" class="output"></pre>
        <textarea id="csvInput" placeholder="Enter CSV here..." class="adjust-area"></textarea>
        <button onclick="convertCsvToJson()">CSV to JSON</button>
        <pre id="jsonCsvOutput" class="output"></pre>
    </div>

    <div class="section">
        <h2>4. Create Hash from String</h2>
        <input type="text" id="hashInput" placeholder="Enter string to hash">
        <button onclick="createHash()">Create Hash</button>
        <pre id="hashOutput" class="output"></pre>
    </div>

```

```
</div>
</div>

<script>
    function showResult(id, text, isSuccess) {
        const element = document.getElementById(id);
        element.textContent = text;
        element.className = isSuccess ? 'success' : 'error';
        element.style.display = 'block';
        element.style.opacity = '1';
    }

    function convertJsonToObject() {
        const jsonInput =
document.getElementById('jsonInput').value;
        try {
            const jsonObject = JSON.parse(jsonInput);
            showResult('jsonOutput',
JSON.stringify(jsonObject, null, 2), true);
        } catch (error) {
            showResult('jsonOutput', 'Invalid JSON', false);
        }
    }

    function convertJsonToDate() {
        const jsonDateInput =
document.getElementById('jsonDateInput').value;
        try {
            const data = JSON.parse(jsonDateInput);
            if (data.date && !isNaN(new
Date(data.date).getTime())) {
                const date = new Date(data.date);
                showResult('jsonDateOutput',
date.toString(), true);
            } else {
                showResult('jsonDateOutput', 'Invalid Date
Format', false);
            }
        } catch (error) {
```

```

        showResult('jsonDateOutput', 'Invalid JSON',
false);
    }
}

function convertJsonToCsv() {
    const jsonInput =
document.getElementById('jsonCsvInput').value;
    try {
        const jsonArray = JSON.parse(jsonInput);
        if (Array.isArray(jsonArray) && jsonArray.length
> 0) {
            const keys = Object.keys(jsonArray[0]);
            const csv = [
                keys.join(','),
                ...jsonArray.map(row => keys.map(key =>
JSON.stringify(row[key])).join(',')))
            ].join('\n');
            showResult('csvOutput', csv, true);
        } else {
            showResult('csvOutput', 'Invalid JSON:
Expected an array with objects.', false);
        }
    } catch (error) {
        showResult('csvOutput', 'Invalid JSON', false);
    }
}

function convertCsvToJson() {
    const csvInput =
document.getElementById('csvInput').value;
    try {
        const lines = csvInput.trim().split('\n');
        if (lines.length > 1) {
            const keys = lines[0].split(',');
            if (keys.length > 0) {
                const jsonArray =
lines.slice(1).map(line => {
                    const values = line.split(',');

```

```

        return keys.reduce((obj, key, index)
=> {
            obj[key] = values[index];
            return obj;
        }, {});
    });

    showResult('jsonCsvOutput',
JSON.stringify(jsonArray, null, 2), true);
} else {
    showResult('jsonCsvOutput', 'Invalid
CSV: No columns found.', false);
}
} else {
    showResult('jsonCsvOutput', 'Invalid CSV: No
data found.', false);
}
} catch (error) {
    showResult('jsonCsvOutput', 'Invalid CSV',
false);
}

}

function createHash() {
    const hashInput =
document.getElementById('hashInput').value.trim();
    if (hashInput.length > 0) {
        const hash =
CryptoJS.SHA256(hashInput).toString();
        showResult('hashOutput', hash, true);
    } else {
        showResult('hashOutput', 'Input cannot be
empty', false);
    }
}
</script>
</body>
</html>
```

Input need to be given:

Convert JSON Text to JavaScript Object*****
{
 "name": "Alice",
 "age": 30,
 "city": "New York"
}

Convert JSON Results into Date*****
{
 "date": "2024-09-01"
}

Convert JSON to CSV*****
[
 {"name": "Alice", "age": 30, "city": "New York"},
 {"name": "Bob", "age": 25, "city": "San Francisco"},
 {"name": "Charlie", "age": 35, "city": "Chicago"}
]

Convert CSV to JSON*****
name,age,city
Alice,30,New York
Bob,25,San Francisco
Charlie,35,Chicago

Create Hash from String*****
HSIT

Simple Converter

Simple Converter

1. Convert JSON Text to JavaScript Object

Enter JSON here...

Convert JSON

1. Convert JSON Text to JavaScript Object

Enter JSON here...

Convert JSON

```
{  
  "name": "Sita",  
  "age": 30,  
  "city": "India"  
}
```

2. Convert JSON Results into Date

Enter JSON with date in "yyyy-mm-dd" format

Convert to
Date

2. Convert JSON Results into Date

Enter JSON with date in "yyyy-mm-dd" format

Convert to
Date

Sun Sep 01 2024 05:30:00 GMT+0530 (India Standard Time)

3. Convert JSON to CSV and CSV to JSON

Enter JSON for CSV conversion...

JSON to
CSV

Enter CSV here...

CSV to
JSON

3. Convert JSON to CSV and CSV to JSON

Enter JSON for CSV conversion...

JSON to
CSV

```
name,age,city  
"Raj",30,"Bengaluru"  
"Ram",25,"Mysore"  
"Mary",35,"Belgavi"
```

Enter CSV here...

CSV to
JSON

```
[  
  {  
    "name": "\\"Raj\\\"",  
    "age": "30",  
    "city": "\\"Bengaluru\\\""  
  },  
  {  
    "name": "\\"Ram\\\"",  
    "age": "25",  
    "city": "\\"Mysore\\\""  
  },  
  {  
    "name": "\\"Mary\\\"",  
    "age": "35",  
    "city": "\\"Belgavi\\\""  
  }  
]
```

4. Create Hash from String

Enter string to hash

Create
Hash

4. Create Hash from String

Enter string to hash

Create
Hash

afb007404732a64dc0f7df545580a923a417a5f2030dcc2477485e771b60ab12